

**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of:  
Mario Leclerc and Jean-Francois Morin

Serial No.: 10/568,303

Filed: February 15, 2006

For: MONOMERS, OLIGOMERS AND  
POLYMERS OF 2-FUNCTIONALIZED  
AND 2,7-DIFUNCTIONALIZED  
CARBAZOLES

Group Art Unit: 1626

Examiner: Unknown

Atty. Dkt. No.: BRKP:012US

Confirmation No.: 3382

**CERTIFICATE OF ELECTRONIC SUBMISSION**

DATE OF SUBMISSION: October 20, 2006

**INFORMATION DISCLOSURE STATEMENT**

**MS AMENDMENT**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

Sir:

In compliance with the duty of disclosure under 37 C.F.R. § 1.56, it is respectfully requested that this Information Disclosure Statement be entered and the documents listed on attached Form PTO-1449 be considered by the Examiner and made of record. Copies of the listed documents required by 37 C.F.R. § 1.98(a)(2) are enclosed for the convenience of the Examiner.

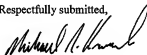
In accordance with 37 C.F.R. § 1.97(g), (h), this Information Disclosure Statement is not to be construed as a representation that a search has been made, and is not to be construed to be

an admission that the information cited is, or is considered to be, material to patentability as defined in 37 C.F.R. § 1.56(b).

The present Information Disclosure Statement is being filed prior to the receipt of a first Official Action reflecting an examination on the merits, and hence is believed to be timely filed in accordance with 37 C.F.R. § 1.97(b). No fees are believed to be due in connection with the filing of this Information Disclosure Statement, however, should any fees under 37 C.F.R. § 1.16 to 1.21 be deemed necessary for any reason relating to these materials, the Commissioner is authorized to deduct the appropriate fees from Fulbright & Jaworski Deposit Account No.: 50-1212/BRKP:012US.

Applicants respectfully request that the listed documents be made of record in the present case.

Respectfully submitted,



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Date: October 20, 2006

Form PTO-1449 (modified)		Atty. Docket No. <b>BRKP:012US</b>	Serial No. <b>10/568,303</b>
List of Patents and Publications for Applicant's		Applicant <b>Mario Leclerc Jean-Francois Morin</b>	
INFORMATION DISCLOSURE STATEMENT		Filing Date: <b>February 15, 2006</b>	Group: <b>1626</b>
(Use several sheets if necessary)			
U.S. Patent Documents <i>See Page 1</i>	Foreign Patent Documents <i>See Page 1</i>	Other Art <i>See Page 1</i>	

### U.S. Patent Documents

Exam. Init.	Ref. Des.	Document Number	Date	Name	Class	Sub Class	Filing Date of App.
	A1	5,902,884	5/11/99	Bauer, <i>et al.</i>	548	447	2/11/98

### Foreign Patent Documents

Exam. Init.	Ref. Des.	Document Number	Date	Country	Language
	B1	CA 1026348	02/14/78	Canada	English
	B2	CA 2196046	07/27/95	Canada	English
	B3	CA 2360826	04/30/02	Canada	English
	B4	WO 03/022816	03/20/03	WIPO	English
	B5	WO 2004/070772	08/19/04	WIPO	German (English Abstract)
	B6	WO 2005/016882	02/24/05	WIPO	English

### Other Art (Including Author, Title, Date Pertinent Pages, Etc.)

Exam. Init.	Ref. Des.	Citation
	C1	Ambrose and Nelson, "Anodic Oxidation Pathways of Carbazoles," <i>J. Electrochem. Soc.</i> 115:1159-1164, 1968.
	C2	Bernius <i>et al.</i> , "Progress with Light-Emitting Polymers," <i>Adv. Mater.</i> , 12:1737-1750, 2000.
	C3	Brabec <i>et al.</i> , "Plastic Solar Cells," <i>Adv. Funct. Mater.</i> , 11:15-26, 2001.
	C4	Burroughes <i>et al.</i> , "Light-Emitting Diodes Based on Conjugated Polymers," <i>Nature</i> , 347:539-541, 1990.
	C5	Chaudhary <i>et al.</i> , "A Simplified Procedure for the Preparation of Triphenylmethylethers," <i>Tet. Lett.</i> , 2:95-98, 1979.
	C6	Chen <i>et al.</i> , "Synthesis and Characterization of Luminescent Polyethers with 2,5-Distyrylthiophene and Aromatic Oxadiazole Chromophores," <i>J. Polym. Sci.</i> , 40:2927-2936, 2002.

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EXAMINER:

DATE CONSIDERED:

EXAMINER, INITIAL IF REFERENCE CONSIDERED, WHETHER OR NOT CITATION IS IN CONFORMANCE WITH MPEP609. DRAW LINE THROUGH CITATION IF NOT IN CONFORMANCE AND NOT CONSIDERED. INCLUDE COPY OF THIS FORM WITH NEXT COMMUNICATION TO APPLICANT.

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Exam. Init.	Ref. Des.	Citation
	C7	DiCésare <i>et al.</i> , "Thermochromic Properties of Quaterthiophene an Alkyl-Substituted Quaterthiophene Derivative and its Corresponding Polymer," <i>Chem. Phys. Lett.</i> , 291:487-495, 1998.
	C8	Donat-Bouillud, "Synthèse, caractérisation et applications de poliesters dérivés d'oligothiophènes," Ph.D. Thesis, University of Montreal, 1998.
	C9	Drolet <i>et al.</i> , "Red-Green-Blue Light Emitting Diodes Containing Fluorene-Based Copolymers," <i>J. Opt. A. Pure Appl. Opt.</i> , 4:S252-S257, 2002.
	C10	Goldoni <i>et al.</i> , "Synthesis and Characterization of New Copolymers of Thiophene and Vinylene: Poly(thienylenevinylene)s and Poly(terthienylenevinylene)s with Thioether Side Chains," <i>J. Polym. Sci., Part A</i> , 37:4629-4639, 1999.
	C11	Gomez <i>et al.</i> , "Synthesis and Characterization of Novel Optically Active Polyarylene Vinylenes with Controlled Effective Conjugation Length," <i>J. Org. Chem.</i> , 65:7501-7511, 2000.
	C12	Ho <i>et al.</i> , "Colorimetric and Fluorometric Detection of Nucleic Acids Using Cationic Polythiophene Derivatives," <i>Angew. Chem. Int. Ed.</i> , 41:1548-1551, 2002.
	C13	Kim <i>et al.</i> , "Synthesis and Properties of New Electroluminescent Polymers Possessing Both Hole and Electron-Transporting Units in the Main Chain," <i>Polymer</i> , 43:4297-4305, 2002.
	C14	Kraft <i>et al.</i> , "Electroluminescent Conjugated Polymers- Seeing Polymers in a New Light," <i>Angew. Chem. Int. Ed.</i> , 37:402-428, 1998.
	C15	Leclerc and Faid, "Electrical Optical Properties of Processable Polythiophene Derivatives," <i>Adv. Mater.</i> , 9:1087-1094, 1997.
	C16	Leclerc, "Optical and Electrical Transducers Based on Functionalized Conjugated Polymers," <i>Adv. Mater.</i> , 11:1491-1498, 1999.
	C17	Leclerc, "Polyfluorenes: Twenty Years of Progress," <i>J Polym Sci, Polym. Chem.</i> , 39:2867-2873, 2001.
	C18	Limburg <i>et al.</i> , "Anionic Polymerization of N-Ethyl-2-Vinylcarbazole and N-Ethyl-3-Vinylcarbazol," <i>Journal of Polymer Science, Polymer Chemistry Edition</i> , 13(5) 1133-9, 1975.
	C19	Liu <i>et al.</i> , "Design and Synthesis of Bipyridyl-Containing Conjugated Polymers: Effects of Polymer Rigidity on Metal Ion Sensing," <i>Macromolecules</i> , 34:23, 7932-7940, 2001.

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	C20	McQuade <i>et al.</i> , "Conjugated Polymer-Based Chemical Sensors," <i>Chem. Rev.</i> , 100:2537-2574, 2000.
	C21	Mitschke <i>et al.</i> , "The Electroluminescence of Organic Materials," <i>J. Mater. Chem.</i> , 10:1471-1507, 2000.
	C22	Morin and Leclerc, "2,7-Carbazole-Based Conjugated Polymers for Blue, Green and Red Light Emission," <i>Macromolecules</i> , 35:8413-8417, 2002.
	C23	Morin and Leclerc, "Synthesis of Conjugated Polymers Derived from N-Alkyl-2,7-carbazoles," <i>Macromolecules</i> , 35:2122-2128, 2002.
	C24	Morin <i>et al.</i> , "Blue-Light-Emitting Devices From New Conjugated Poly (N-Substituted-2,7-Carbazole) derivatives," <i>Appl. Phys. Lett.</i> , 80:341-343, 2002.
	C25	Neher, "Polyfluorene Homopolymers: Conjugated Liquid-Crystalline Polymers for Bright Blue Emission and Polarized Electroluminescence," <i>Macromol. Rapid Comm.</i> , 22:1365-1385, 2001.
	C26	Pavlopoulos <i>et al.</i> , "Laser action from 2,6,8-Position Trisubstituted 1,3,5,7-Tetrathylpyromethene-BF2 Complexes," <i>Appl. Opt.</i> , 29:3885-3886, 1990.
	C27	Registry Number 1150-62-5 CAPLUS (9-Phenyl-Carbazole)
	C28	Registry Number 1484-08-8 CAPLUS (9-Butyl-Carbazole)
	C29	Registry Number 1484-12-4 CAPLUS (9-Methyl-Carbazole)
	C30	Registry Number 3110-89-1 CAPLUS (9-Methyl-Carbazole-2,7-dicarboxaldehyde)
	C31	Registry Number 56166-62-2 CAPLUS (9-Ethyl-Carbazole-2-Carboxaldehyde)
	C32	Registry Number 86-28-2 CAPLUS (9-Ethyl-Carbazole)
	C33	Registry Number 86-74-8 CAPLUS (9H-Carbazole)
	C34	Saricic <i>et al.</i> , "Semiconducting Polymer-Buckminsterfullerene Heterojunctions: Diodes, Photodiodes, and Photovoltaic," <i>Appl. Phys. Lett.</i> , 62:585-587, 1993.
	C35	Sarker <i>et al.</i> , "Synthesis and Luminescent Studies of Poly(9phenylenevinylene)s Containing a Biphenyl Moiety," <i>Macromolecules</i> , 35:223-230, 2002.
	C36	Shi <i>et al.</i> , "Conjugated Polymers Containing Arylamine Pendants for Light-Emitting Diodes," <i>Macromolecules</i> , 34:6571-6576, 2001.

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	C37	Skotheim <i>et al.</i> , "Handbook for Conducting Polymers, 2 <sup>nd</sup> ed.," New York, table of contents and pp. 259-261, 1998.
	C38	Zheng <i>et al.</i> , "A Binaphthyl-Based Conjugated polymer for Light-Emitting Diodes," <i>Chem. Mater.</i> , 12:13-15, 2000.
	C39	Zotti <i>et al.</i> , "Electrochemical, Conductive, and Magnetic Properties of 2,7-Carbazole-Based Conjugated Polymers," <i>Macromolecules</i> , 35:2122-2128, 2002.

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